

Application No. 09/940,665
Amendment dated December 11, 2003
Reply to Office Action of June 17, 2003

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

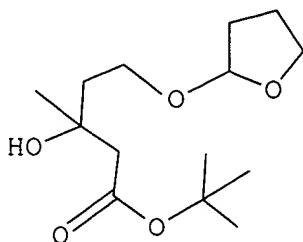
Listing of Claims

Claim 1 (currently amended): A chemically amplified resist composition comprising a base resin reacting in the presence of an acid, a photo acid generator generating an acid upon exposure, and a monomer compound having the combination of an acetal moiety and a site which is eliminated by an acid in its molecule.

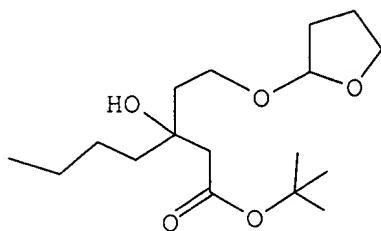
Claim 2 (original): The chemically amplified resist composition of claim 1, wherein said compound has the acetal moiety and the site eliminated by an acid at locations such that a final product containing a ring structure can be produced through reactions in the presence of the acid.

Claim 3 (currently amended): The chemically amplified resist composition of claim 2, wherein said compound is represented by the formula:

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or



Claim 4 (currently amended): The chemically amplified resist composition of claim 1, wherein said base polymer is a homopolymer of an acrylate or ~~methacrylate~~ methacrylate monomer or a copolymer of two or more of such monomers, a polymer of cycloolefin monomer, or a hybrid polymer of an acrylate or methacrylate monomer and a cycloolefin monomer.

Claim 5 (currently amended): The chemically amplified resist composition of claim 2, wherein said base polymer is a homopolymer of an acrylate or ~~methacrylate~~ methacrylate monomer or a copolymer of two or more of such monomers, a polymer of cycloolefin monomer, or a hybrid polymer of an acrylate or methacrylate monomer and a cycloolefin monomer.

Claim 6 (original): The chemically amplified resist composition of claim 1, wherein said base resin is a copolymer of 2-methyladamantyl methacrylate and gamma-butyrolactone methacrylate.

Claim 7 (original): The chemically amplified resist composition of claim 2, wherein said base resin is a copolymer of 2-methyladamantyl methacrylate and gamma-butyrolactone methacrylate.

Claim 8 (withdrawn): A chemically amplified resist composition comprising a base resin, which is a copolymer having the combination of an acetal moiety and a site eliminated by an acid in one repeating unit and reacts in the presence of an acid, and a photo acid generator generating an acid upon exposure.

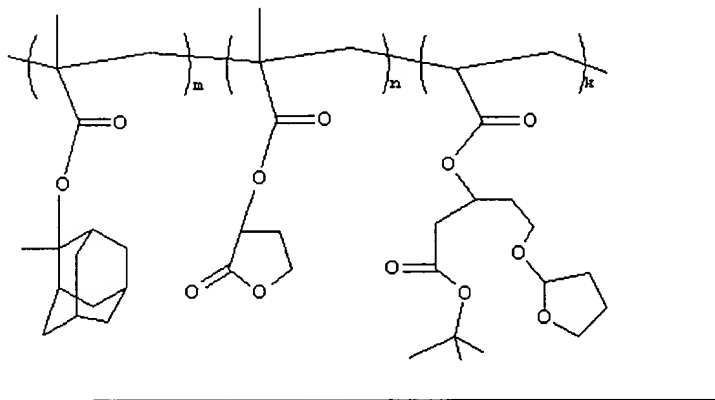
Claim 9 (withdrawn): The chemically amplified resist composition of claim 8, wherein said repeating unit has the acetal moiety and the site eliminated by an acid at locations such that a final product containing a ring structure can be produced through reactions in the presence of the acid.

Claim 10 (withdrawn): The chemically amplified resist composition of claim 8, wherein said copolymer has, in addition to said repeating unit, a repeating unit derived from an acrylate or methacrylate monomer, or a repeating unit derived from a cycloolefin monomer, or a combination

of repeating units derived from an acrylate or methacrylate monomer and a cycloolefin monomer.

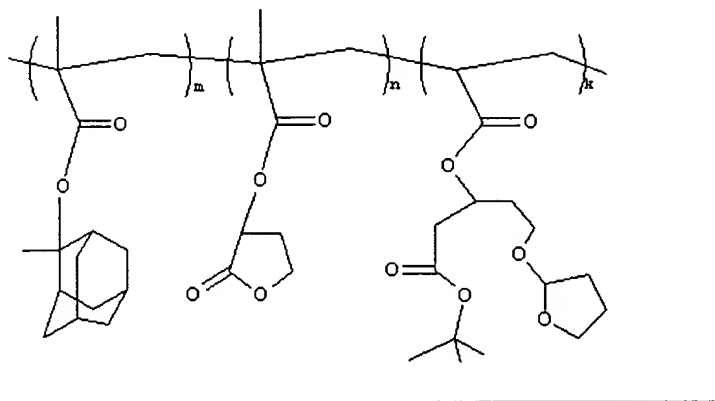
Claim 11 (withdrawn): The chemically amplified resist composition of claim 9, wherein said copolymer has, in addition to said repeating unit, a repeating unit derived from an acrylate or methacrylate monomer, or a repeating unit derived from a cycloolefin monomer, or a combination of repeating units derived from an acrylate or methacrylate monomer and a cycloolefin monomer.

Claim 12 (withdrawn, currently amended): The chemically amplified resist composition of claim 8, wherein said copolymer is represented by the formula:



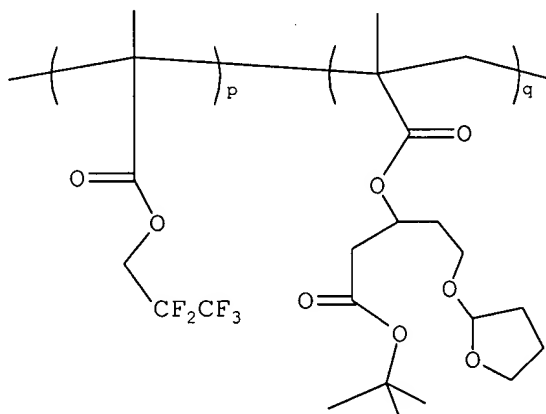
wherein m, n, and k are positive integers.

Claim 13 (withdrawn, currently amended): The chemically amplified resist composition of claim 9, wherein said copolymer is represented by the formula:



wherein m , n , and k are positive integers.

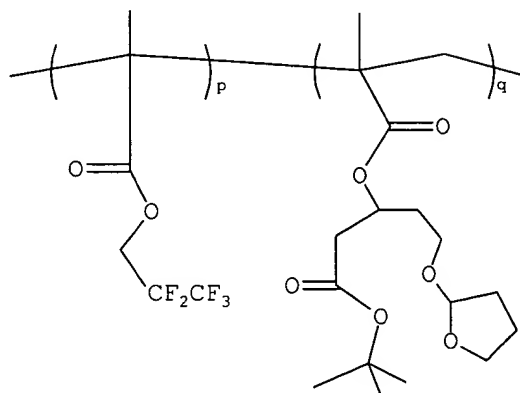
Claim 14 (withdrawn): The chemically amplified resist composition of claim 8, wherein said copolymer is represented by the formula:



wherein p and q are positive integers.

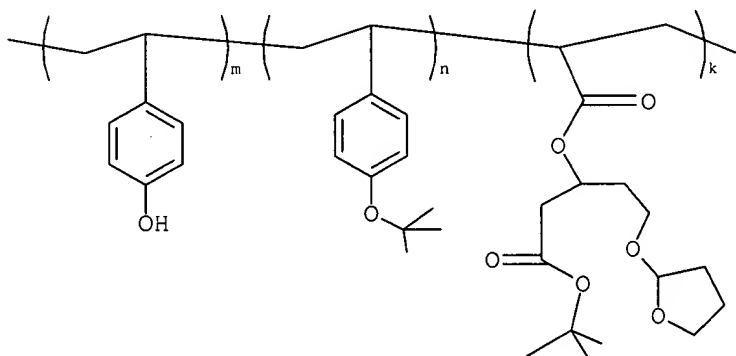
Claim 15 (withdrawn): The chemically amplified resist composition of claim 9, wherein

said copolymer is represented by the formula:



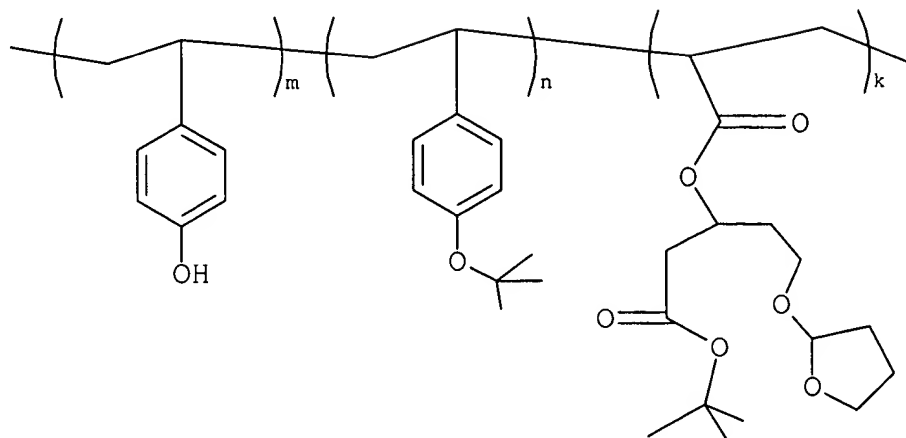
wherein p and q are positive integers.

Claim 16 (withdrawn): The chemically amplified resist composition of claim 8, wherein said copolymer is represented by the formula:



wherein m, n, and k are positive integers.

Claim 17 (withdrawn): The chemically amplified resist composition of claim 9, wherein said copolymer is represented by the formula:



wherein m, n, and k are positive integers.

Claim 18 (withdrawn): The chemically amplified resist composition of claim 8, wherein said copolymer is free of aromatic rings.

Claim 19 (withdrawn): The chemically amplified resist composition of claim 9, wherein said copolymer is free of aromatic rings.

Claim 20 (original): A method for forming a patterned film by applying a resist material to a film provided on the surface of a substrate, to form a resist layer, pre-baking the resist layer, selectively exposing the pre-baked resist layer to a radiation, post-baking the exposed resist layer, developing the post-baked resist layer to form a resist pattern, and patterning the film underlying the resist pattern by the use of the resist pattern as a mask, wherein the chemically amplified resist

composition of claim 1 is used as the resist material.

Claim 21 (withdrawn): A method for forming a patterned film by applying a resist material to a film provided on the surface of a substrate, to form a resist layer, pre-baking the resist layer, selectively exposing the pre-baked resist layer to a radiation, post-baking the exposed resist layer, developing the post-baked resist layer to form a resist pattern, and patterning the film underlying the resist pattern by the use of the resist pattern as a mask, wherein the chemically amplified resist composition of claim 8 is used as the resist material.

Claim 22 (original): The method of claim 20, wherein said radiation is an excimer laser beam, X-rays, or an electron beam.

Claim 23 (withdrawn): The method of claim 21, wherein said radiation is an excimer laser beam, X-rays, or an electron beam.

Claim 24 (original): The method of claim 20, wherein said radiation is an ArF excimer laser beam or vacuum ultraviolet light having a shorter wavelength.

Claim 25 (withdrawn): The method of claim 21, wherein said radiation is an ArF excimer laser beam or vacuum ultraviolet light having a shorter wavelength.